

## **REMARKS**

Claims 1-22 and 37 are rejected. Claims 23-36 are withdrawn. Claims 1-37 subject to restriction and /or election requirement. New Claim 38 has been added. Claims 1-22, 37 and 38 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

The basis for new claim 38 is found in Claims 2, 3, and 7 as originally filed, as well as pg. 7, line 4, pg. 8, lines 24-28 and pg. 17, Examples 2, 3, and 4 of the specification as originally filed.

### **Rejection Of Claims 1-3, 7-15, 19-22 and 37 Under 35 U.S.C. §103(a):**

The Examiner has rejected Claims 1-3, 7-15, 19-22 and 37 under 35 U.S.C. §103(a) as being unpatentable over Kawano et al. (U.S. Patent No. 5,478,631) for reasons of record and for reasons given below.

Kawano relates to an inkjet recording sheet comprising a substrate and an ink receptive layer disposed on said substrate, said ink receptive layer containing a pigment and a binder as its main components, the improvement comprising said ink receptive layer being an aqueous composition containing a pigment and an amphoteric latex as its main components, which absorbs water-base ink well, gives high-grade images, and ensures excellent water resistance of printed images. Kawano fails to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer.

The present invention comprises an ink recording element comprising a support having a hydrophilic absorbing layer and a laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings which provides better laminate adhesion than the elements of the prior art, while maintaining other properties such as excellent image quality, no banding, bleeding, coalescence, or cracking in inked areas, absorption of large amounts of ink, quick drying to avoid blocking, high optical

densities in the printed areas, freedom from differential gloss and high levels of image fastness. The present invention also includes an ink recording element specifically comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) as well as an ink recording element comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion.

To establish a prima facie case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combines) must teach or suggest all the claim limitations. Kawano fails to teach, disclose or suggest a laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings which provides better laminate adhesion. Kawano fails to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer. Therefore, the reference fails to provide any motivation to modify the reference to produce the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) which provides better laminate adhesion, the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer specifically comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. The reference also fails to provide any likelihood of obtaining improved laminate adhesion by using a derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized

poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. Finally, since the reference fails to mention laminate adhesion or the use of derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion in an overcoat layer to improve laminate adhesion, the reference fails to teach, disclose or suggest the limitations of the invention as presently claimed.

Even assuming a prima facie case of obviousness has been made, the present invention provides surprising results. Kawano teaches the use of poly(vinyl alcohol) (col. 6, lines 1-15) which cannot be used alone, but must be utilized with an amphoteric latex (col. 6, lines 26-33). Kawano also indicates in col. 4, lines 51-58, that PVA and modified PVA, when used alone as binders, provide inferior surface strength and water resistance. The present invention, Inventive Example 1, which has an overcoat containing derivatized PVA demonstrates excellent laminate adhesion (Table 2, page 18) as compared to Comparative Example 5, having an overcoat layer containing non-derivatized PVA, as well as Comparative Example 6, having an overcoat containing PVA and polyethyleneoxide copolymer.

The Examiner indicates that, while Kawano does not refer to any layer as a laminate adhesion promoting absorbing hydrophilic layer, the term "laminate adhesion promoting absorbing hydrophilic" is a list of properties attributed to the overcoat layer and, since the outermost layer of Kawano may be formed from acetoacetylated polyvinyl alcohol, it inherently possesses these properties. However, it should be noted that Comparative Example 6 on pg. 17 of the present specification has poor laminate adhesion (see Table 2, pg. 19). Comparative Example 6 contains a poly(vinyl alcohol)/poly(ethylene oxide copolymer) (WO-320, Nippon Gohsei), included under the disclosure in Kawano col. 4, line 53, col. 6, lines 4-5. Therefore, improved laminate adhesion, is not a property any layer has if it is successfully laminated to adjacent layers and is not a property which the uppermost layer of Kawano et al. clearly possesses. In addition, since Kawano fails to mention any differences in laminate adhesion that may be expected from the use of the list of materials disclosed therein, it is not at

all clear that the recitation of Kawano at col. 8 indicates that improved or promoted laminate adhesion was a property that they were aware of and used to determine composition of their layers.

In addition, the Examiner indicates that the examples fail to demonstrate unexpected results when derivatized polyvinyl alcohol is used in place of non-derivatized polyvinyl alcohol or a mixture of non-derivatized polyvinyl alcohol and polyethylene oxide copolymer, as the examples do not vary only the polyvinyl alcohol. The attached Declaration of Romano indicates in paragraphs 4-7 that, in fact, the examples do include a showing that unexpected results are obtained merely by changing from non-derivatized to derivatized polyvinyl alcohol, as the coating aids (surfactants) were present in the comparative examples as well.

Therefore, since the reference fails to provide any suggestion or motivation to modify the reference, fails to provide a reasonable expectation of success, fails to teach or suggest all the claim limitations, and in the light of surprising results, the Applicants respectfully request the Examiner to reconsider and withdraw the rejection.

**Rejection Of Claims 1, 2, 4-6, and 37 Under 35 U.S.C. §103(a):**

The Examiner has rejected Claims 1, 2, 4-6 and 37 under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. as applied to claims 1-3, 7-15 and 19-22 above, and further in view of Tomizawa et al. (6,224,971) for reasons of record and for reasons given above.

Kawano relates to an inkjet recording sheet comprising a substrate and an ink receptive layer disposed on said substrate, said ink receptive layer containing a pigment and a binder as its main components, the improvement comprising said ink receptive layer being an aqueous composition containing a pigment and an amphoteric latex as its main components, which absorbs water-base ink well, gives high-grade images, and ensures excellent water resistance of printed images. Kawano fails to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl

alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer.

Tomizawa discloses novel inkjet recording sheets having high water resistance, excellent transparency of the ink-receptive layer, ink absorptivity and color developability as well as the advantages of absence of surface tackiness and blocking and a liquid coating composition for forming the ink-receptive coating layer of the recording sheet. The liquid coating composition comprises, as a uniform blend in an aqueous medium, an acetoacetylated polyvinyl alcohol, a polyvinylpyrrolidone resin, and an acidic aqueous dispersion of a colloidal silica, each in a specified weight proportion. Tomizawa fails to disclose laminate adhesion or the use of a laminate adhesion promoting overcoat layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings.

The present invention comprises an ink recording element comprising a support having a hydrophilic absorbing layer and a laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings which provides better laminate adhesion than the elements of the prior art, while maintaining other properties such as excellent image quality, no banding, bleeding, coalescence, or cracking in inked areas, absorption of large amounts of ink, quick drying to avoid blocking, high optical densities in the printed areas, freedom from differential gloss and high levels of image fastness. The present invention also includes an ink recording element specifically comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) as well as an ink recording element comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion.

To establish a prima facie case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combines) must teach or suggest all the claim limitations. Kawano and

Tomizawa fail to teach, disclose or suggest a laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings which provides better laminate adhesion. Tomizawa and Kawano also fail to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer. Therefore, the reference fails to provide any motivation to modify the reference to produce the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) which provides better laminate adhesion, the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer specifically comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. The references also fail to provide any likelihood of obtaining improved laminate adhesion by using a derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. Finally, since the references fail to mention laminate adhesion or the use of derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion in an overcoat layer to improve laminate adhesion, the reference fails to teach, disclose or suggest the limitations of the invention as presently claimed.

Also, as discussed above, the present invention provides evidence of surprising results over Kawano.

Therefore, since the references fail to suggest or motivate one to modify or combine the references, fail to provide a reasonable expectation of

success, fail to teach or suggest all the claim limitations, and in the light of surprising results, the Applicants respectfully request the Examiner to reconsider and withdraw the rejection.

**Rejection Of Claims 1 and 15-18 Under 35 U.S.C. §103(a):**

The Examiner has rejected Claims 1 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. as applied to claims 1-3, 7-15, 19-22 above, and further in view of Ueda et al. (EP 791,475) for reasons of record and for reasons given above.

Kawano relates to an inkjet recording sheet comprising a substrate and an ink receptive layer disposed on said substrate, said ink receptive layer containing a pigment and a binder as its main components, the improvement comprising said ink receptive layer being an aqueous composition containing a pigment and an amphoteric latex as its main components, which absorbs water-base ink well, gives high-grade images, and ensures excellent water resistance of printed images. Kawano fails to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer.

Ueda discloses a recording sheet for inkjet recording, which comprises a support, and provided thereon, an ink receiving layer, wherein the ink receiving layer contains a water soluble polymer, a polymer latex and gelatin, to provide an excellent image under various conditions and an excellent transportability. Ueda fails to disclose laminate adhesion as a problem, and fails to disclose the use of derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings in the overcoat layer to produce improved adhesion.

To establish a prima facie case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when

combines) must teach or suggest all the claim limitations. Kawano and Ueda fail to teach, disclose or suggest a laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings which provides better laminate adhesion. Ueda and Kawano also fail to disclose differences with laminate adhesion which relate to material selection and fails to disclose the improvement in laminate adhesion achievable by selecting a derivatized poly(vinyl alcohol) having at least one hydroxyl group replaced by ether or ester groupings, preferably acetoacetylated poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) in combination with an anionic vinyl latex or urethane dispersion, for use in the overcoat layer. Therefore, the reference fails to provide any motivation to modify the reference to produce the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer containing derivatized poly(vinyl alcohol) which provides better laminate adhesion, the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer specifically comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or the laminate adhesion promoting absorbing hydrophilic overcoat polymer layer comprising acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. The references also fail to provide any likelihood of obtaining improved laminate adhesion by using a derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion, as presently claimed. Finally, since the references fail to mention laminate adhesion or the use of derivatized poly (vinyl alcohol), acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) or acetoacetylated poly(vinyl alcohol) as the derivatized poly(vinyl alcohol) in combination with anionic vinyl latex polymer or an anionic polyurethane dispersion in an overcoat layer to improve laminate adhesion, the reference fails to teach, disclose or suggest the limitations of the invention as presently claimed.

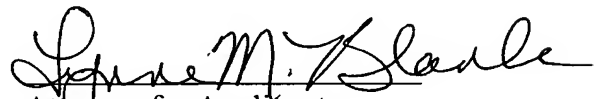
Also, as discussed above, the present invention provides evidence of surprising results over Kawano.



Therefore, since the references fail to suggest or motivate one to modify or combine the references, fail to provide a reasonable expectation of success, fail to teach or suggest all the claim limitations, and in the light of surprising results, the Applicants respectfully request the Examiner to reconsider and withdraw the rejection.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,

  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Charles E. Romano

INK RECORDING ELEMENT

Serial No. 10/068,824

Filed 06 February 2002

Group Art Unit: 1774

Examiner: Pamela R. Schwartz

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*Christine Tolhurst*  
Christine Tolhurst

*July 21, 2004*  
Date

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22313-1450

**DECLARATION UNDER RULE 132**

1. I, Charles E. Romano, Jr., state that I am a resident and citizen of the United States. I obtained a Bachelor of Science degree in Chemistry from LeMoyne College in Syracuse, New York in 1982. I have been an employee of Eastman Kodak Company (hereinafter referred to as Kodak) since May of 1985. I have been assigned to work in product development and research of imaging processes, including areas relating to inkjet inks and inkjet elements.
2. I am one of the co-inventors of U.S. Serial No. US 10/068,824.
3. I prepared and coated the Examples described in the present Application.
4. The surfactants used in the overcoat layer of Example 1 were added as coating aids, without which repellencies would occur, resulting in an unacceptable coating.
5. These surfactants were also utilized in comparative Control Examples 1-6, as indicated by the description in the Examples.

6. For example, Control Example 1 states "As in example 1 except that the overcoat layer consisted of hydroxyethyl cellulose (HEC QP 300, Dow)," which is intended to indicate that the Z-320 acetoactylated poly(vinyl alcohol) was switched with hydroxyethyl cellulose, but everything else remained the same.
7. One of ordinary skill in the art would recognize that coating aid would be added to the exemplary overcoat layers to provide acceptable coatings, free of repellencies.
8. I further declare that all statements made herein of my own knowledge are true and that the statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

Date: 7-14-04

Charles E. Romano, Jr.  
Charles E. Romano, Jr.